

reception, and will perhaps prove to be congeneric with *Mus chiropus*, lately described by me *, which also has the molar teeth of *Mus* combined with an opposable hallux and a general *Chiropodomys*- or *Vandeleuria*-like form. Pending further investigation, however, I prefer to do as I did then, and leave the new form in the genus *Mus*.

I have taken the liberty of naming this beautiful little species, which looks as if it would make a most enchanting pet, in honour of Her Highness the Ranee of Sarawak, a lady whose interest in the zoology of that country is scarcely inferior to that of her husband the Rajah.

LVII.—On a Small Collection of Land-Shell^s from Palawan and Balabac, Philippine Islands. By EDGAR A. SMITH.

[Plate XVIII.]

THE British Museum has recently obtained a small collection of land-shells, collected by Mr. A. Everett in Palawan and Balabac. Of the thirteen species it contains five appear to be new. This large proportion of undescribed species is not altogether surprising, as neither of these islands has been thoroughly searched for Mollusca. A list of the known species was given by the Rev. A. H. Cooke in the Proc. Zool. Soc. 1892, pp. 461–463. It comprises the species quoted in the various papers by Hidalgo in the ‘Journal de Conchyliologie,’ 1887, pp. 36, 37–58, 93–192, 1888, pp. 30–97, and in Dohrn’s “Beitrag zur Conchylienfauna des philippinischen Insel Palawan” †.

Including the new *Lagochilus similis* here described fourteen species of land-mollusks have now been recorded from Balabac. The *Amphidromus quadrasi*, although appearing in Mr. Cooke’s list, was not previously known from Balabac, but only from a small adjacent island called “Isla de Candaramanes” (*Hidalgo*). Another species from this island quoted by Hidalgo ‡ and not in Mr. Cooke’s list of the Balabac shells is *Corasia zamboanga*, Hombron and Jacquinot.

* Ann. Mus. Genov. (2) x. p. 884 (1891), and p. 935 (1892), pl. xi. figs. 4–7.

† Nachrichtenblatt deutsch. mal. Gesell. 1889, pp. 53–63.

‡ Mem. Acad. Madrid, 1890, vol. xiv. p. 151.

Thirty species are enumerated from Palawan or Paragua, and if *Euplecta boholensis*, Pfr., be distinct from *E. cebuensis*, Möllendorff, it will add one more to the total. It is quoted from Palawan by Hidalgo*, but not in Cooke's paper.

The most interesting addition to the fauna occurring in the present collection is the new species of *Lagochilus*, a genus hitherto unknown from Balabac or Palawan. It occurs, however, sparingly in other parts of the Philippine group and also to the south in Borneo &c.

1. *Macrochlamys pseustes*. (Pl. XVIII. figs. 1-3.)

Testa angustissime perforata, depressa, orbicularis, superne fusca, infra pallidior, nitidissima, subpellucida; anfractus 6, regulariter et lentecrescentes, convexi, sutura profunda discreti, lineis incrementi supra distinctioribus quam infra sculpti, ultimus ad peripheriam acute rotundatus; spira brevissima, ad apicem obtusa; apertura oblique lunata; perist. tenue, margine columellari leviter incrassato, supra umbilicium angustissimum breviter reflexo.

Diam. maj. 21 millim., min. 19; alt. 10.

Hab. Palawan.

This species is remarkable for the convex whorls and the deep suture. It is of a rather rich brown colour on the upper surface, but considerably paler beneath. The lines of growth are rather strongly marked above, so that they present an almost subplicate appearance. The deep suture is bordered with a very narrow dark brown line, which, however, is not noticeable without a lens.

The genus *Macrochlamys* has not hitherto been recorded from Palawan, but there are several allied species found in North Borneo which have been placed in the section *Everettia* by Godwin-Austen (Proc. Zool. Soc. 1891, pp. 33-36).

2. *Lamprocystis chlororhaphé*. (Pl. XVIII. figs. 4-6.)

Testa parva, angustissime perforata, depresso conoidea, tenuis, pellucida, nitida, cornea; anfractus 5-6, lente acerescentes, convexiusculi, infra suturam anguste albido-marginati, vix striati, ultimus ad peripheriam acute rotundatus; spira breviter conoidea, ad apicem obtusa; apertura oblique lunata; peristoma simplex, margine columellari leviter incrassato, sed vix reflexo.

Diam. maj. 6 millim., min. $5\frac{1}{4}$; alt. 4.

Hab. Palawan.

The minute perforation and the palish line at the suture

* L. c. p. 85.

are the most noticeable features of this little species. It is about the same size as *L. lucidella*, Pfr., but differs from it in having the body-whorl narrower, the columella less reflexed over the perforation, and the suture narrowly margined with white.

3. *Trochonanina paraguensis*. (Pl. XVIII. figs. 7-9.)

Testa imperforata, depresso conoidea, acute carinata, unicolor, cornea, vel interdum utrinque carinam anguste fusco zonata; anfractus 7-8, superne vix convexiusculi, lente et regulariter crescentes, incrementi lineis oblique arcuatis striisque spiralibus paucis sculpti, ultimus haud descendens, acute carinatus, infra convexus, haud spiraliter striatus; carina supra et infra vix compressa: apertura angusta; peristoma album, magnum, margine supero leviter incrassato et subexpanso, basali fortius incrassato. Diam. maj. $18\frac{1}{2}$ millim., min. 17; alt. 8.

Hab. Palawan.

This species is closely allied to *T. labuanensis*, Pfeiffer. It may be distinguished by the spire being rather less elevated, the keel not so acute and not compressed above or below; the umbilical region is not so impressed, and the peristome, especially the basal margin, is distinctly thickened. This species is much more distinct from *T. labuanensis* than the latter is from *T. conicoides*, Metcalfe, which indeed are considered synonymous by Godwin-Austen. *T. conicoides*, however, has a more elevated and conical spire than *labuanensis*, and the coil of the whorls is different, so that in the latter the last whorl seen from above is conspicuously narrower than in *conicoides*.

T. sylvana, Dohrn and Semper, has a higher spire than *paraguensis*, a sharper and more compressed keel, and has not the basal lip of the aperture thickened. It is all but identical with *labuanensis*.

4. *Trochomorpha Metcalfei*, Pfr.

Hab. Palawan (*Hidalgo, Everett*).

This species is very variable and is met with on several of the islands of the Philippine group. With Hidalgo (*l. c.* p. 112) I agree in considering *T. bohollensis* of Semper as a variety.

5. *Hemiplecta densa*, var.

The variety of this species from Palawan, namely that described by Pfeiffer as *Helix Schumacheriana*, has already

been quoted by Dohrn (Nachrichtsbl. deutsch. mal. Gesell. 1889, p. 57).

Two forms of it were obtained by Mr. Everett, also in Palawan, one in which the last whorl is much more acutely keeled and more finely sculptured beneath than in the other. Considerable variation in these respects occurs also in the Bornean examples in the British Museum. The very acute specimens from Palawan are very like *H. cymatium* of Benson from Penang. Two specimens of the latter, marked in Pfeiffer's handwriting from Pulo Zancavi, Malacca, appear to me quite inseparable from the present species, but two others from Penang, presented by Mr. De Burgh, although very like the var. *Schumacheriana*, appear to have an additional whorl and to be less rapidly coiled, so that the last is narrower than in the Bornean shell.

6. *Helix (Hadra) Traillii*, Pfeiffer.

The typical form of this species is more conical than the specimens obtained at Palawan by Mr. Everett, and much more coarsely striated. The transverse bands also are not nearly so dark-coloured as in the specimens just received. Most of the latter are covered with a thin bright yellowish epidermis, with which the dark zones contrast strongly. They vary considerably in the elevation of the spire, but none are so depressed as *H. monochroa* or its variety *palawanica*. Occasionally the ground colour above is of a dark reddish tint. The bands on the body-whorl are usually four in number, namely a narrow one at the suture, a broader one at the periphery, a still broader one below it, and a faint one above it. The last is sometimes absent.

7. *Cochlostyla satyrus*, Broderip.

The series sent home by Mr. Everett from Palawan confirms the opinion of Dohrn and Cooke that *C. palawanensis*, Pfr., *C. cinerosa*, Pfr., *C. librosa*, Pfr., and *C. Graellsii* of Hidalgo are mere varieties.

Mr. Everett also obtained this species at Banguey Island, situated between Borneo and Palawan.

8. *Amphidromus quadrasi*, Hidalgo.

(Pl. XVIII. figs. 10-13.)

Amphidromus quadrasi, Hidalgo, Journ. de Conch. 1887, p. 36, pl. ii. fig. 2.

Hab. Balabac (*Everett*); island of Candaramanes or Caramandanes, near Balabac (*Hidalgo*).

Numerous specimens of the typical form of this species were collected by Mr. Everett, besides a number of other forms which probably merely indicate colour-variation. They may be thus described :—

- a. Green, with a deep rose-coloured band at the suture and around the base of the lilac columella (typical form). (Fig. 10.)
- b. Yellow, with similar band at suture and base; columella lilac.
- c. Yellow, without sutural band, with a broad green band on the back of the body-whorl behind the lip; columella pale pink. (Fig. 11.)
- d. Uniformly yellow, faintly streaked with green; columella white.
- e. Yellow, with the spire ornamented with oblique, wavy, rich brown lines, forming blotches above the suture, and with a similar green band as in the preceding form; columella pale pink. (Fig. 13.)
- f. Very dark chestnut, almost black, but pale at the suture, with oblique wavy white streaks, which are interrupted at the middle of the body-whorl. A yellowish zone occurs below the periphery and a pinkish one around the base of the columella. The lip is blackish and the columella bluish white. (Fig. 12.)

The above are a few variations in colour illustrated by six specimens selected from a hundred. Other slight variations were observed in many other examples. The ground-colour varies from bright green to bright or pale yellow, with all shades of intermediate tints. The form *f*, of which there was but one specimen, is most strikingly abnormal. It has a black lip, whereas in all the rest it is white. However, in two specimens in the Museum marked Borneo, which I believe belong to this species, it is almost black.

Similar great differences in colour occur in *A. Adamsii*, Reeve.

9. *Opisthoporus quadrasii*, Hidalgo.

Hab. Palawan (*Hidalgo, Dohrn, and Everett*).

10. *Leptopoma vitreum*, Lesson.

Several varieties of this species occur in Palawan. Some are white with fine pellucid spiral lines; in others the latter

are pale brownish and more or less interrupted or dotted, and the variety named *L. bicolor*, Pfr., is also among the specimens sent by Mr. Everett, who also obtained a similar series of varieties at Balabac.

11. *Leptopoma palawanensis*. (Pl. XVIII. figs. 20, 21.)

Testa turbīnata, umbilicata, mediocriter tennis, albida, epidermide tenui flavescēte induta, flammulis obliquis irregularibus nigro-fuscis subconfertis supra picta, infra peripheriam lineis angustioribus zigzag-formibus et zona saturatiore prope medium ornata; spira conica, mediocriter acuta; anfractus $5\frac{1}{2}$, primi $1\frac{1}{2}$ flavescētes, sequentes duo saturate fusco-purpurei, omnes convexi celeriter crescentes, spiraliter distanter lirati vel carinati, ultimus in medio subangulatus, postice carinatus (carina versus aperturam sensim obsoleta), supra peripheriam carinis subæquidistantibus tribus cinctus, infra medium fere lævis; apertura haud circularis, triangulariter rotundata; peristoma album, leviter expansum, margine columellari arcuato, recedente, superne callo tenui labro juncto.

Diam. maj. 18 millim., min. 14; alt. $15\frac{1}{2}$. Apertura cum perist. 10 lata, $9\frac{1}{2}$ longa.

Hab. Palawan.

Perhaps *L. regulare*, Pfr.*, is nearer this species in some respects than any other yet described. It is, however, considerably smaller and has more numerous keels. It is also taller in proportion to the width and has a rounder mouth.

Besides the spiral keels in the present species, faint traces of intermediate spiral striæ are observable, and the lower part of the body-whorl not unfrequently exhibits a slender raised line at a little distance from the more pronounced central carina.

12. *Lagochilus similis*. (Pl. XVIII. figs. 14-16.)

Testa *L. ciliato* similis, sed major, lævior, haud spiraliter striata, inferne haud picta; anfractibus superioribus fortius carinatis, umbilico carina vel angulo haud circumdato.

Diam. maj. 16 millim., min. $12\frac{1}{2}$; alt. 13. Apertura cum perist. 8 alta et lata.

Hab. Balabac and Palawan.

This species, although so very like *L. ciliatum* of Sowerby†,

* Reeve's Conch. Icon., *Leptopoma*, figs. 14-14 b.

† Thesaurus Conch. vol. i. p. 127, pl. xxx. figs. 237, 238; Pfeiffer, Conch.-Cab. ed. 2, *Cyclostoma*, p. 150, pl. xx. figs. 26-27; Reeve, Conch. Icon., *Leptopoma*, pl. vii. fig. 39.

may be distinguished thus:—It is larger and has a more glossy appearance, caused by the absence of the fine spiral striae which mark the surface of that species. The flame-like painting which ornaments the upper surface never extends beyond the periphery, the base being of a uniform light or dark horny tint.

In the three specimens of *L. ciliatum* in the Museum collection the base and especially the umbilicus exhibit vivid flammulations. Also two out of these three specimens have a strong carina bordering the umbilicus, a feature entirely wanting in all the examples of the present species. In the latter the peripheral keel revolves up the spire and is visible just above the suture, and a second thread-like carina occurs upon the middle of the penultimate and two preceding whorls, but is almost obsolete upon the last. In *L. ciliatum* these keels or liræ are much less conspicuous.

The ground-colour varies from reddish to whitish horn-colour, and the amount of flame-like painting upon the upper surface is more or less extensive, in some cases forming merely a series of blotches at the suture.

The typical examples of *L. ciliatum* were obtained in the island of Luzon by Mr. Cuming; but the occurrence of the species in the Philippine Islands has not since been confirmed.

13. *Cyclotus euzonus*, Dohrn. (Pl. XVIII. figs. 17–19.)

Hab. Palawan (*Dohrn and Everett*).

A single specimen of this species was obtained by Mr. Everett, differing from the type in being entirely of a chestnut-colour with the exception of a yellow narrowish zone at the periphery. In form this species exactly resembles *C. Boxalli* of Godwin-Austen, from North Borneo, but may be distinguished by difference of colour and its smooth thin epidermis, which, in the Bornean shell, is thick, opaque, and striated.

EXPLANATION OF PLATE XVIII.

- Figs.* 1–3. *Macrochlamys pseustes*.
Figs. 4–6. *Lamprocystis chlororhaphæ*.
Figs. 7–9. *Trochonanina paraguensis*.
Figs. 10–13. *Amphidromus quadrasi*.
Figs. 14–16. *Lagochilus similis*.
Figs. 17–19. *Cyclotus euzonus*.
Figs. 20, 21. *Leptopoma palawanensis*.